

SERIAL NO.: 10/810,403

CASE NO.: CH2973US NA

IN THE CLAIMS

1. (Currently Amended) A composition comprising, or produced from, titanium or a titanium compound, a phosphorus-containing ester wherein said phosphorus-containing ester is a phosphite ester, and optionally a solvent wherein said titanium compound is a titanium chelate comprising or produced from a tetraalkyl titanate and a complexing agent; said complexing agent is a hydroxycarboxylic acid, an alkanolamine, an aminocarboxylic acid, or combinations of two or more thereof; and said phosphorus-containing ester contains no free P-OH group.

2. (Canceled).

3. (Original) A composition according to claim 1 wherein said phosphorus-containing ester is tris-phosphite ester, diphosponite ester, or combinations thereof.

4. (Currently Amended) A composition according to claim 1 wherein said phosphorus-containing ester is trimethyl phosphite; triethyl phosphite; tributyl phosphite; tri-isopropylphosphite; trisdodecyl phosphite; trinonyldecyl phosphite; triphenylphosphite; phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-~~tetrakis~~(2,4-bis(1,1-dimethylethyl)phenyl)ester; (tris-(2,4-di-t-butyl) phosphite; ~~triethylene~~ triethylene glycol phosphite; tripropylene glycol phosphite; tributylene glycol phosphite; or combinations of two or more thereof.

5. (Currently Amended) A composition according to claim ~~2~~1 wherein said complexing agent is an α -hydroxycarboxylic acid, an alkanolamine, an α -aminocarboxylic acid, or combinations of two or more thereof.

6. (Original) A composition according to claim 4 wherein said complexing agent is lactic acid, glycolic acid, citric acid, isocitric acid, tartaric acid, malic acid, malonic acid, glycine, hydroxyethyl glycine, bis-hydroxyethyl glycine, or combinations of two or more thereof.

7. (Original) A composition according to claim 4 wherein said complexing agent is lactic acid.

8. (Original) A composition according to claim 4 wherein said tetraalkyl titanate is tetra isopropyl titanate, tetra n-butyl titanate, or combinations thereof.

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9. (Original) A composition according to claim 7 wherein said tetraalkyl titanate is tetra isopropyl titanate, tetra n-butyl titanate, or combinations thereof.

10. (Currently Amended) A composition according to claim 1 wherein said composition further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

11. (Currently Amended) A composition according to claim 4 wherein said composition further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

12. (Currently Amended) A composition according to claim 7 wherein said composition further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

13. (Currently Amended) A composition according to claim 9 wherein said composition further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

14. (Currently Amended) A composition according to claim 9 wherein said composition further ~~comprising~~ comprises sodium hypophosphite.

15. (Original) A composition according to claim 9 wherein said titanium compound is TYZOR[®]LA (titanium bis ammonium lactate).

16. (Original) A composition according to claim 3 further comprising a co-catalyst, which is aluminum, cobalt, zirconium, zinc, a compound comprising one or more of these metals, or combinations of two or more thereof.

17. (Original) A composition according to claim 8 further comprising a co-catalyst, which is zinc acetate, zinc chloride, zinc nitrate, zinc sulfate, or combinations of two or more thereof.

18. (Currently Amended) A composition according to claim 15 wherein said stabilizer is tributyl phosphite; phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-tetrakis(2,4-bis(1,1-dimethylethyl)phenyl)ester; ~~triethylene glycol~~ triethylene glycol phosphite; or combinations of two or more thereof.

19. (Currently Amended) A composition according to claim 17 wherein said stabilizer is tributyl phosphite; phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-

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tetrakis(2,4-bis(1,1-dimethylethyl)phenyl)ester; ~~triethylene~~ triethylene glycol phosphite; or combinations of two or more thereof.

20. (Currently Amended) A process to produce an ester or polyester comprising contacting, in the presence of a catalyst composition, a carbonyl compound with an alcohol; wherein said composition comprises, or is produced from, a titanium compound, a phosphorus-containing ester wherein said phosphorus-containing ester is a tris-phosphite ester, diphosphonite ester, or combinations, and optionally a solvent; said titanium compound is a titanium chelate comprising or produced from a tetraalkyl titanate and a complexing agent; said complexing agent is a hydroxycarboxylic acid, an alkanolamine, an aminocarboxylic acid, or combinations of two or more thereof; and said phosphorus-containing ester a phosphite ester containing no free P-OH group.

21. (Canceled)

22. (Currently Amended) A process according to claim ~~21~~ 20 wherein said phosphorus-containing ester is trimethyl phosphite; triethyl phosphite; tributyl phosphite; tri-isopropylphosphite; trisdodecyl phosphite; trinonyldecyl phosphite; triphenylphosphite; phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-, tetrakis(2,4-bis(1,1-dimethylethyl)phenyl)ester; (tris-(2,4-di-t-butyl) phosphite; ~~triethylene~~ triethylene glycol phosphite; tripropylene glycol phosphite; tributylene glycol phosphite; or combinations of two or more thereof.

23. (Currently Amended) A process according to claim ~~21~~ 20 wherein said complexing agent is an α -hydroxycarboxylic acid, an alkanolamine, an α -aminocarboxylic acid, or combinations of two or more thereof.

24. (Original) A process according to claim 22 wherein said complexing agent is lactic acid, glycolic acid, citric acid, isocitric acid, tartaric acid, malic acid, malonic acid, glycine, hydroxyethyl glycine, bis-hydroxyethyl glycine, or combinations of two or more thereof.

25. (Original) A process according to claim 22 wherein said complexing agent is lactic acid.

26. (Original) A process according to claim 22 wherein said tetraalkyl titanate is tetra isopropyl titanate, tetra n-butyl titanate, or combinations thereof.

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27. (Original) A process according to claim 25 wherein said tetraalkyl titanate is tetra isopropyl titanate, tetra n-butyl titanate, or combinations thereof.

28. (Currently Amended) A process according to claim 22 wherein said composition further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

29. (Currently Amended) A process according to claim 27 wherein said composition further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

30. (Currently Amended) A process according to claim 28 wherein said composition further ~~comprising~~ comprises sodium hypophosphite.

31. (Original) A process according to claim 27 wherein said carbonyl compound is terephthalic acid or ester thereof and said alcohol is ethylene glycol.

32. (Original) A process according to claim 27 wherein said titanium compound is TYZOR[®]LA (titanium bis ammonium lactate).

33. (Original) A process according to claim 26 further comprising a co-catalyst, which is aluminum, cobalt, zirconium, zinc, a compound comprising one or more of these metals, or combinations of two or more thereof.

34. (Original) A process according to claim 32 further comprising a co-catalyst, which is zinc acetate, zinc chloride, zinc nitrate, zinc sulfate, or combinations of two or more thereof.

35. (Currently Amended) A process to reduce the formation of color in a polyester comprising contacting a carbonyl compound, optionally in the presence of a catalyst, with an alcohol to produce a product comprising an oligomer and contacting said product with a phosphorus-containing ester wherein said phosphorus-containing ester is a tris-phosphite ester, diphosphonite ester, or combinations thereof; said carbonyl compound is an organic acid or its salt or its ester or combinations thereof; and said phosphorus-containing ester a phosphite ester containing no free P-OH group.

36. (Canceled)

37. (Currently Amended) A process according to claim ~~36~~ 35 wherein said catalyst comprises, or is produced from, a titanium compound, and optionally a solvent; said titanium compound is a titanium chelate comprising or produced from a tetraalkyl titanate and a complexing agent; said oligomer comprises repeat units

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derived from said carbonyl compound and said alcohol; and said complexing agent is a hydroxycarboxylic acid, an alkanolamine, an aminocarboxylic acid, or combinations of two or more thereof and said phosphorus-containing ester is trimethyl phosphite; triethyl phosphite; tributyl phosphite; tri-isopropylphosphite; trisdodecyl phosphite; trinonyldodecyl phosphite; triphenylphosphite; phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-~~tetrakis~~(2,4-bis(1,1-dimethylethyl)phenyl)ester; (tris-(2,4-di-t-butyl) phosphite; ~~triethylene~~ triethylene glycol phosphite; tripropylene glycol phosphite; tributylene glycol phosphite; or combinations of two or more thereof.

38. (Original) A process according to claim 37 wherein said complexing agent is lactic acid, glycolic acid, citric acid, isocitric acid, tartaric acid, malic acid, malonic acid, glycine, hydroxyethyl glycine, bis-hydroxyethyl glycine, or combinations of two or more thereof.

39. (Original) A process according to claim 38 wherein said complexing agent is lactic acid.

40. (Original) A process according to claim 37 wherein said tetraalkyl titanate is tetra isopropyl titanate, tetra n-butyl titanate, or combinations thereof.

41. (Original) A process according to claim 39 wherein said tetraalkyl titanate is tetra isopropyl titanate, tetra n-butyl titanate, or combinations thereof.

42. (Currently Amended) A process according to claim ~~36~~ 35 wherein said catalyst further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

43. (Currently Amended) A process according to claim 38 wherein said catalyst further ~~comprising~~ comprises a hypophosphorous acid, its salt, or both.

44. (Original) A process according to claim 41 wherein said hypophosphorous acid, its salt, or both is sodium hypophosphite.

45. (Original) A process according to claim 41 wherein said titanium compound is TYZOR[®]LA (titanium bis ammonium lactate).

46. (Original) A process according to claim 37 further comprising a co-catalyst, which is aluminum, cobalt, zirconium, zinc, a compound comprising one or more of these metals, or combinations of two or more thereof.

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47. (Original) A process according to claim 45 further comprising a co-catalyst, which is zinc acetate, zinc chloride, zinc nitrate, zinc sulfate, or combinations of two or more thereof.

48. (Original) A process according to claim 47 wherein each of said catalyst and said co-catalyst is in a solution in which water or ethylene glycol is solvent.

49. (Original) A process according to claim 48 wherein said carbonyl compound is terephthalic acid or ester thereof and said alcohol is ethylene glycol.

50. (Currently Amended) A process according to claim 49 wherein said stabilizer is tributyl phosphite; phosphorous acid, [1,1'-biphenyl]-4,4'-diylbis-tetrakis(2,4-bis(1,1-dimethylethyl)phenyl)ester; ~~triethylene~~ triethylene glycol phosphite; or combinations of two or more thereof.